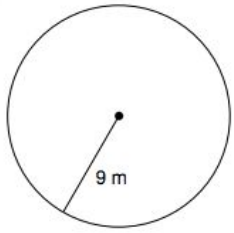
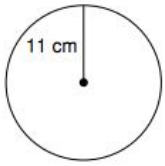
IM1 Problem Set 12 - Daily Tasks		
Task 1	**Task 2**	**DC**
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

Problem Set 12	
12.1	What does $(x-2)^3$ mean? What about $\left(\frac{5x^2}{2y^4}\right)^3$? So now, simplify the expression $\left(\frac{2x}{3y^3}\right)^3 \times \left(\frac{9y}{6x^3}\right)^2$
12.2	Prove using algebra that the three equations below all represent the same line. a. $y = \frac{2}{3}x + 6$ b. $3y - 2x = 18$ c. $y - 2 = \frac{2}{3}(x + 6)$
12.3	For each of the following linear equations, determine the slope and y-intercept. Then graph each of the lines. a. $y = \frac{7}{3} - 4x$ b. $-5x + 2y = -8$ c. $y = -x$
12.4	a. Fill in the table at the right with value for x and y so that the pairs are solutions to the equation $5x - 3y = 10$. b. Use the ordered pairs to graph the line. Based on your graph, is the slope of the line positive or negative? c. Determine the slope of the line just as you did previously. Does this correspond with your answer to part b? d. How could you have found the slope just by looking at the equation? e. What is special about the point with 0 as its y-coordinate?
12.5	Solve the following equations: a. (i) $-18 - 6k = 6(1 + 3k)$ (ii) $5n + 34 = -2(1 - 7n)$ b. (i) $2(4x - 3) - 8 = 4 + 2x$ (iv) $3v - 5 = -8(6 + 5v)$

x	y
0	
	0

12.6	A water tank can hold 250 gallons of water. A pipe delivers water into the tank at the rate of 16 gallons/min. a. If the tank starts with 26 gallons in it, write an equation that represents how many gallons of water are in the tank after *t* minutes. b. Then determine how long it takes to fill the tank. c. A hole in the tank is letting water out of the tank at a rate of 2 gal/min. How much longer does it take to fill that tank than it would have if the tank didn't have a hole in it?
12.7	Use appropriate formulas to determine the unknowns in each of the following: a. At a pressure of 405 kPa, the volume of a gas is 6.00 cm^3 . Assuming the temperature remains constant, at what pressure will the new volume be 4.00 cm^3 ? b. A volume of gas at 1.10 atm was measured at 326 cm^3 . What will be the volume if the pressure is adjusted to 1.90 atm? c. sample of gas has a volume of 852 mL at 25°C. What Celsius temperature is necessary for the gas to have a volume of 945 mL?
12.8	Find the area and circumference of the following four circles: 3)  4)  5) radius = 2.6 in 6) radius = 34.1 in